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Comparison of the Effects of Dexmedetomidine and Labetalol on Controlled Hypotension in Maxillofacial Surgery

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ABSTRACT

Background & objectives: The use of controlled hypotension is important to reduce bleeding in some surgeries. This study aimed to determine the effects of dexmedetomidine (DEX) and labetalol for induced hypotension in maxillofacial fractures surgery.

Methods: In this triple-blind randomized controlled clinical trial study, the patients with maxillofacial fractures were randomly divided into two groups: group 1. Dexmedetomidine (DEX) (bolus dose: 1µg/kg and maintenance dose: 0.3-0.5 µg/kg/h) and group 2. Labetalol (bolus dose: 0.3mg/kg and maintenance dose: 0.2-0.5 mg/kg/h). The patient's hemodynamic indices (including heart rate (HR), systolic blood pressure (SBP), diastolic blood pressure (DBP), and mean arterial pressure (MAP) were recorded at various surgical intervals. Finally, the surgeon's satisfaction (from 1-6 points) was evaluated. Data were analyzed using SPSS 19 software.

Results: The MAP, SBP, and DBP were significantly higher in the DEX group than the Labetalol group especially at 30 and 90 minutes after the bolus. The mean HR was significantly lower in the DEX group than Labetalol during the recovery period. The surgeon's satisfaction in the Labetalol group was significantly higher than the DEX group.

Conclusion: Based on the results, labetalol offers a better hemodynamics conditions than DEX during surgery and also lead to greater overall surgeon satisfaction.

Keywords: Dexmedetomidine; Labetalol; Hypotensive Anesthesia; Maxillofacial Surgery; Blood Pressure